

WCRR 2016 Held in Milan

From May 29 to June 2, WCRR 2016, the 11th World Congress on Railway Research was held in Milan, Italy, at Fiera Milano, an exhibition hall in the suburbs of Milan.

WCRR is an international congress which has been hosted and managed by the WCRR Organizing Committee composed of UIC, SNCF of France, DB of Germany, RSSB of U.K., Trenitalia of Italy, TTCI of U.S.A., and RTRI.

Nearly 1,000 participants from 38 countries took part in this 11th WCRR congress and about 100 people attended from Japan. Under the main congress theme “Research and Innovation from Today Towards 2050,” three plenary sessions and 8 technical sessions were held, and at the technical sessions, a total of 312 oral presentations (66 from Japan) and 140 poster presentations (26 from Japan) were delivered. At the oral sessions, the presentations were made in two different categories, “Today’s Research” for challenges that railways are currently facing and “Vision & Future” for research projects aiming for the medium- and long-term visions.

At this congress, two new approaches for presentations, the e-Poster (digital displays for posters) and Proof-Of-Concept-(POC)-type presentations were introduced to the technical sessions.

[Plenary sessions]

- Customers, Market & Competition
- Technology & Innovation
- Research from Different Perspectives

[Themes of technical sessions]

- Rolling Stock
- Infrastructure
- Railway System
- Passenger Mobility from door to door
- Freight Logistics
- Sustainability
- Economics and Policy
- Operations and Safety

On May 30, the opening ceremony was followed by Plenary Session 1 entitled “Customers, Market & Competition” and Masaki Ogata, Vice Chairman of JR East joined the discussions as one of the panelists. Vice Chairman Ogata explained that JR East has been able to do business on sound financial footing by systematizing and streamlining their business, not by resorting to fare increase or governmental subsidies, and stressed that ICT, information and communications technologies have played significant roles in order to attain healthy management. He also spoke about the further advancement in recent years in applying ICT to customer-oriented services and in providing a wider variety of services, taking an example of “Suica,” the smart card ticketing system by JR East. He went on to say that the ICT including IoT (the Internet of Things), artificial intelligence and big data which will be developing exponentially in the years ahead perfectly fits to industries such as railway operation, which require a tremendous amount of infrastructure and facilities and provide services to a vast number of customers. He concluded his speech by saying that, in order to further promote the use of ICT in railway operation, it will be increasingly important to address not only the traditional types of in-house innovation but also open innovation including international collaboration.

In Plenary Session 2 on May 31, “Technology & Innovation,” RTRI’s President Norimichi Kumagai joined the panel discussion. President Kumagai stated that, from the standpoint of a research organization which provides technical solutions to railway operators, it is important to swiftly provide the market with quality outcomes which will flexibly meet the needs of customers and society. He stressed that, for that purpose, it is essential to increase the efficiency of R&D and to combine a wide variety of research techniques including advanced simulation technologies in a well-balanced manner. He also referred to the importance of digitalizing railways and pointed out that the advanced technologies such as artificial intelligence, image processing and big data analysis will be able to greatly contribute to labor conservation and automation of railway operations. Furthermore, he mentioned the significance of quantifying human decision-making processes, using the latest brain measurement technologies. Finally he stressed the necessity of further improving the advantages of railways in high energy efficiency and low carbon emission, and introduced the latest research efforts of RTRI.

At the technical exhibition which was open in parallel with the presentation sessions, 29 companies and organizations participated. From Japan, JR East and Hitachi Ltd., participated as well as RTRI and other JR group companies.

The awards for outstanding research papers were given to eight oral presentations, one for each of the eight research fields, one poster presentation and one Proof-of-Concept presentation, and a special award for young researchers was given to one researcher under the age of 30. From among Japanese researchers, Yoshikata Tanabe of JR Central won the award for outstanding research papers in the field of “Operations and Safety.”

The next WCRR congress is to be held at the end of October 2019 in Tokyo. At the Closing Ceremony in Milan, RTRI’s Executive Director Fuminao Okumura replaced Marco Caposciutti of Trenitalia as the Chairman of the WCRR Organizing Committee. Executive Director Okumura expressed his thanks and respect to the efforts of the Italian Organizing Committee which successfully completed WCRR 2016.

He referred to the significance that the next WCRR congress will be held in Asia, a region showing rapid progress in economy and railway technologies. Furthermore, he expressed his hope that many people will come to Tokyo from around the world and sense how vital a role railways have been playing in the Japanese economy and society.



Opening Ceremony



Plenary Session 1

From left to right:

Maurizio Manfellotto, CEO, Hitachi Rail Italy

Masaki Ogata, Vice Chairman, JR East, and President, UITP

Sergio De Luca, Board Member, Mermec

Cinzia Farisè, CEO, Trenord



Plenary Session 2

From left to right:

Norimichi Kumagai, President, RTRI

Carlo Maria Borghini, Executive Director, Shift2Rail Joint Undertaking

Josef Doppelbauer, Executive Director, European Railway Agency
(now: European Union Agency for Railway)

Anson Jack, Professor, University of Birmingham



Mr. Yoshikata TANABE of JR-Central, the award-winning speaker, at the oral session



Fuminao Okumura, Executive Director, RTRI, was handed the WCCR plaque